

## A New Species of *Schoenoplectus* (Cyperaceae) from Southern Africa

Eisuke HAYASAKA

Botanical Garden, Graduate School of Science, Tohoku University, Sendai, 980-0862 JAPAN  
e-mail: hayasaka@biology.tohoku.ac.jp

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The new species *Schoenoplectus patentiglumis* Hayasaka is described from Mozambique, Zimbabwe, and South Africa.

**Key words:** Cyperaceae, new species, *Schoenoplectus patentiglumis*, *Schoenoplectus* sect. Supini, southern Africa.

The following new species has turned up while preparing a monograph of *Schoenoplectus* (Rchb.) Palla. This paper also clarifies the distinctions among *S. articulatus* (L.) Palla and its allies, including the present new species, which have been confused with each other.

***Schoenoplectus*** (sect. Supini) ***patentiglumis*** Hayasaka, sp. nov. [Figs. 1, 2, 3b]

Affinis *Schoenoplecto articulato* (L.) Palla, sed glumis anguste ovatis vel late ovatis patentibus ubi fructiferis stramineis raro distaliter brunneolis et non rufescentibus, antheris brevioribus 0.7–1 mm longis, spiculis paucioribus 1–12, et culmis angustioribus 1–3 (–4) mm latis differt.

**Type.** South Africa. Natal. Zululand: Lower Umfolozi District, Umfolozi Game Reserve, in shallow water and wet mud at edge of pan in thornveld, alt. ca. 700 ft, 16 Aug. 1957, C. J. Ward 3137 (NU-holo, two tufts mounted, fruiting). According to the original label, this specimen is a duplicate from NPB.

Tufted, glabrous, amphi­carpous annual, ca. 30–60 cm high. Rhizome inconspicuous,

very short, brownish, firm. Roots finely fibrous, spongy, brownish, dense. Culms erect, tufted in small clumps, terete, smooth, finely striate, stramineous to pale brown when dried, 6–36 cm long, 1–3 (–4) mm wide in middle, proximally slightly narrowed, nodeless or often 1-noded 1–6 cm above the base. Leaves 1–3, basal or often uppermost one cauline; lower sheaths short, closed or scale-like, membranous to chartaceous, pale brown, finely veined, apex obtuse, uppermost sheath closed, tubular, 5–12 cm long, chartaceous, stramineous, finely veined, smooth, finely striate, tightly or sometimes rather loosely surrounding culm, orifice oblique, margin narrowly hyaline, minutely brown-spotted, apex obtuse; blades absent; ligules absent. Inflorescences pseudolateral, capitate with 1–12 spikelets, stramineous, 1–3.5 cm across; involu­cral bract solitary, culm-like, terete, erect, 20–40 cm long, equaling or often longer than culm, smooth, finely striate, stramineous to pale brown when dried, transversely septate at intervals of up to ca. 36 mm and the intervals becoming shorter toward apex, adaxial side proximally open, narrowly hyaline-margined,

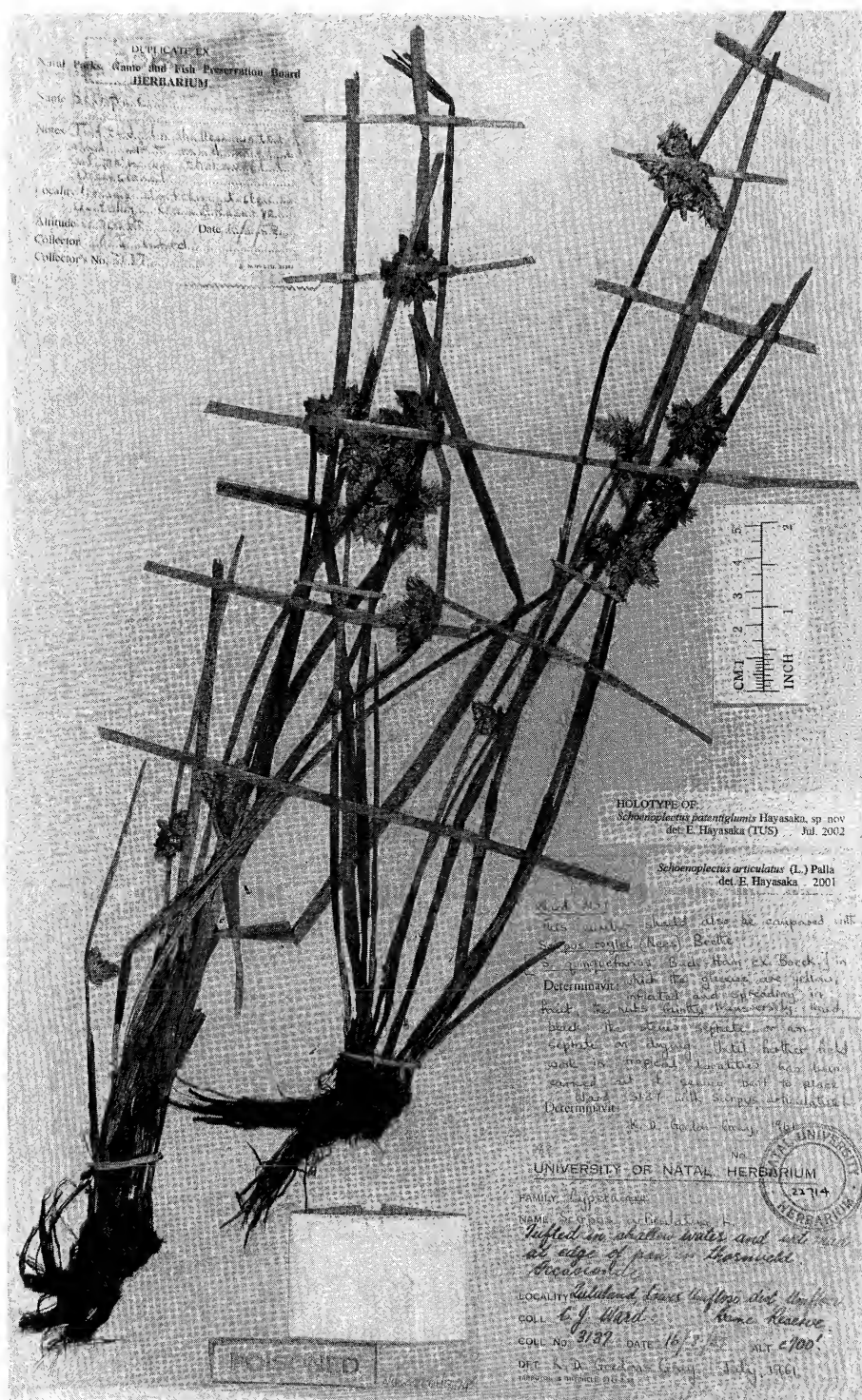


Fig. 1. Holotype of *Schoenoplectus patentiglumis* Hayasaka (C. J. Ward 3137, NU).

apex obtuse. Spikelets sessile, ovoid to oblong-ovoid, terete, 7–15 mm long, 4–5 mm wide at the early stage or up to 10 mm wide when fruiting with glumes spreading, stramineous, base rounded, apex subacute or obtuse, rather loosely many-flowered. Glumes narrowly to broadly ovate, shallowly boat-shaped, 4–5 mm long, 2–3 (–4) mm wide, loosely imbricate, persistent, spreading when fruiting with margins inrolled and often nutlets and rachilla partly exposed, membranous to thin-chartaceous, margin smooth, abaxial surface glabrous, slightly lustrous, wholly stramineous or rarely distally brown-tinged, adaxial surface pale-brown-lineolate-spotted, apex entire, acute or obtuse, often split near the apex and becoming bifid or trifid, lateral veins very fine, conspicuous or inconspicuous, ca. 10 on each side, midrib fine, conspicuous, prolonged into very minute mucro 0.1 mm or less long. Stamens 3; filaments filiform, flattened, pale brown, faintly 1-veined; anthers narrowly oblong to linear, 0.7–1 mm long, light yellow, connective apex obtuse, very minute, less than 0.1 mm long, pale brown, smooth. Styles trifid, very slender, pale brown, almost smooth. Perianth segments absent. Nutlets broadly obovate or mostly obpiriform, almost equilaterally trigonous, 1.6–1.8 mm long, 1.3–1.5 mm wide, widest above the middle, angles sharp, smooth on the angles, sides concave, smooth, blackish brown at maturity, lustrous, base cuneate or constricted, apex shortly cuspidate or obtuse, beak indistinct or apparently absent. Basal solitary flower often present at culm-base in axil of leaf sheath: basal flower sessile, pistillate, 1 per culm; style trifid, elongate and projecting from orifice of leaf sheath, very slender, pale brown, smooth; basal nutlet broadly ovate, concave-convex, 1-ribbed on abaxial side, ca. 3 mm long, ca. 2.1 mm wide, transversely finely rugulose or almost smooth, lustrous, base rounded, apex acute.

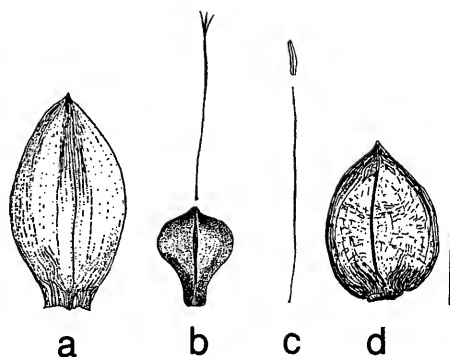


Fig. 2. Floral parts of *Schoenoplectus patentiglumis*. a: Glume (abaxial side). b: Nutlet (abaxial side) and style. c: Stamen. d: Basal nutlet. Voucher specimens. a–c: Holotype. d: N. Jacobsen 62A, NU. Scale bar = 1 mm.

**Distribution.** Zimbabwe, Mozambique, South Africa (Fig. 4).

Other specimens examined. **MOZAMBIQUE.** Sul do Save, entre o Canicado e regulado do Chicholo, Margem dum charco, 4 Sep. 1949, M. Myre & A. Balsinhas 800 (NU). **SOUTH AFRICA. Natal. Zululand:** without precise locality, 1967, D. Gillissen 636 (NU); Ingwavuma Distr., Ndumu Game Reserve, Mabemane Pool, in shallow water of seasonal pool, 19 Dec. 1971, E. S. Pooley 1574 (NU); Umfolozi Game Reserve, in or around the edge of a pan near the head of the Qoyi stream, 14 Mar. 1961, O. Letley s. n. (NU, 2 sheets). **ZIMBABWE.** Beitbridge, Sentinel Ranch, May 1967, P. Symes 67/M/5 (NU); Gokwe, Sengwe Nature Reserve, Jan. 1966, N. Jacobsen 62A (NU, mixed collection with *Schoenoplectus senegalensis* = N. Jacobsen 62B).

*Schoenoplectus patentiglumis* is distinguished from *S. articulatus* by the glumes narrowly to broadly ovate [vs. broadly ovate-triangular], spreading when fruiting [vs. appressed when fruiting], wholly stramineous or rarely distally brown-tinged [vs. reddish-brown-tinged in middle], the shorter anthers 0.7–1 mm long [vs. 1.1–2 mm long], the inflorescences with less numerous 1–12 spikelets [vs. (2–)4 to ca. 100 spikelets], and the narrower culms 1–3 (–4) mm wide [vs. (2.5–) 3–8 mm wide].

The new species is here included in

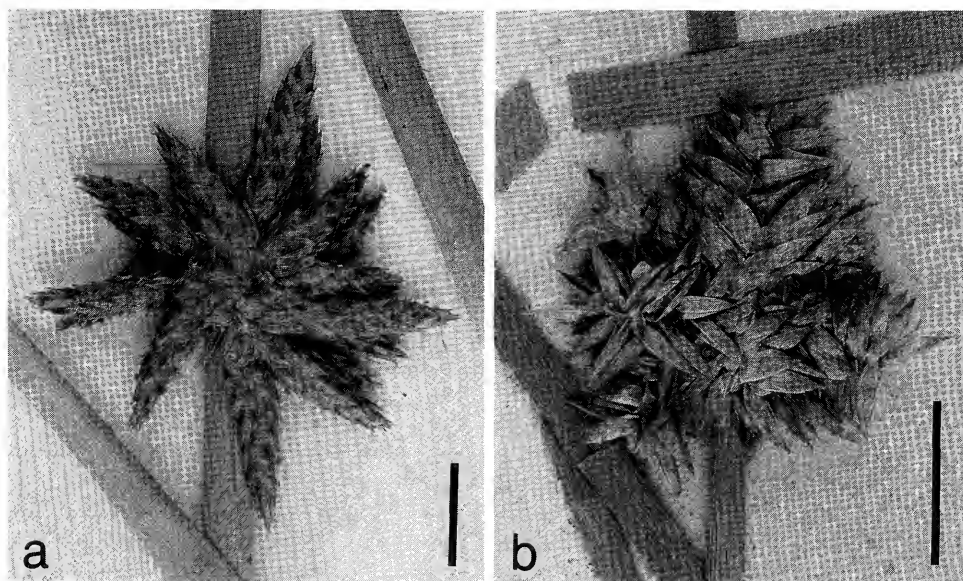


Fig. 3. Inflorescences of *Schoenoplectus articulatus* (a: A. R. Bean 3755, BRI) and *S. patentiglumis* (b: N. Jacobsen 62A, NU). Scale bars = 10 mm.

*Schoenoplectus* sect. *Supini* (Cherm.) J. Raynal based on the ability to produce a solitary flower in the basal leaf sheath with a larger nutlet than those from the spikelets (Figs. 2b, 2d), and the frequent presence of a cauline leaf (Raynal 1976, Browning 1992, Smith and Hayasaka 2001). The section is most diverse in Africa and Madagascar. Raynal (1976) included 21 species in the section, and recently two more species have been added (Scholz 1981, Smith 1995). The present addition increases the species number to 24.

Within the section, the six species, i.e., *Schoenoplectus articulatus*, *S. patentiglumis*, *S. praelongatus* (Poir.) J. Raynal, *S. roylei* (Nees) Ovczinn. & Czukav., *S. senegalensis* (Steud.) Palla, and *S. vohemarensis* (Cherm.) J. Raynal, form a closely related species group characterized by the transversely septate involucre bract (the *Schoenoplectus articulatus* complex). Because these species are similar to each other and specimens are

often misidentified, I here provide a key to distinguish these.

#### Key to the species of the *Schoenoplectus articulatus* complex

1. Nutlets plano-convex, transversely sharply ridged; styles bifid; Madagascar.....  
..... *S. vohemarensis*
1. Nutlets sharply trigonous, smooth or transversely rugulose; styles trifid ..... 2
2. Nutlets smooth ..... 3
2. Nutlets transversely rugulose ..... 4
3. Glumes narrowly to broadly ovate, spreading when fruiting with rachilla partly exposed, stramineous; anthers 0.7–1 mm long; spikelets up to 12; culms 1–3 (–4) mm wide; southern Africa .....  
..... *S. patentiglumis*
3. Glumes broadly ovate-triangular, appressed when fruiting, reddish-brown-tinged; anthers 1.1–2 mm long; spikelets up to ca. 100; culms (2.5–) 3–8 mm wide; Africa, Madagascar, South Asia, Indo-China,

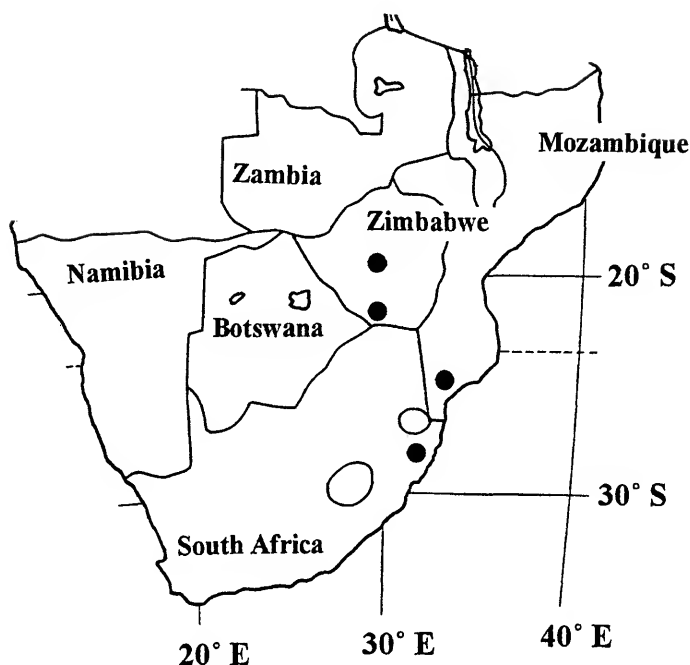


Fig. 4. Distribution of *Schoenoplectus patentiglumis*.

- Australia ..... *S. articulatus*
4. Nutlets transversely rugulose with more than 20 very fine rugae; culms 2–6 mm wide; glumes 2–3.5 mm wide; South Asia, Indo-China, Malesia, Australia .....  
..... *S. praelongatus*
4. Nutlets transversely rugulose with ca. 8–12 blunt sinuate rugae; culms 0.7–2 mm wide; glumes 1.3–2.5 mm wide ..... 5
5. Glumes lanceolate to ovate, 1.3–2 mm wide, spreading when fruiting with rachilla partly exposed; nutlets narrowly obovate to obovate, 0.6–0.9 (–1.1) mm wide; culms 0.7–1.5 mm wide; Africa, South Asia, Central Asia, West Asia .....  
..... *S. roylei*
5. Glumes ovate to broadly ovate, 1.5–2.5 mm wide, appressed when fruiting; nutlets obovate to broadly obovate, 0.9–1.3 (–1.5) mm wide; culms 1.3–2 mm wide; Africa, India ..... *S. senegalensis*

As with *Schoenoplectus patentiglumis*, *S. vohemarensis* and *S. roylei* also have glumes spreading during fruiting. Raynal (1976), in his key to the species of *Schoenoplectus* sect. Supini, used this character to distinguish *S. vohemarensis* and *S. roylei* from *S. senegalensis*. I have confirmed the stability of this character within species, and use it to distinguish *S. patentiglumis* from *S. articulatus* (Fig. 3).

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早坂英介：アフリカ南部からフトイ属（カヤツリグサ科）の1新種

アフリカ南部（モザンビーク，ジンバブエ，南アフリカ）からフトイ属の1新種 *Schoenoplectus patentiglumis* Hayasaka を記載した。本種は総苞片に横隔壁があり，小堅果が鋭三稜形で平滑であることで *Schoenoplectus articulatus* (L.) Palla に似るが，小穂の鱗片は狭卵形から広卵形で果実期に開出し，表面全体が藁色で赤みを帯びず，葯は短く長さ0.7–1 mm，小穂は少なく1–12個，稈は細く幅1–3 (–4) mm であるので区別できる。タイプはナタール大学ハーバリウム (NU, 南アフリカ) にある。本種は稈の基部の葉鞘の腋に1個の雌性花を生じ，稈の基部より上に1個の節と茎葉をも

つことから，*Schoenoplectus* sect. Supini (Cherm.) J. Raynal ホソガタホタルイ節に含めた。ホソガタホタルイ節にはアフリカ，マダガスカルを中心に24種がある。この節の中で本種を含む6種 *Schoenoplectus articulatus*, *S. patentiglumis*, *S. praelongatus* (Poir.) J. Raynal, *S. roylei* (Nees) Ovczinn. & Czukav., *S. senegalensis* (Steud.) Palla, *S. vohemarensis* (Cherm.) J. Raynal は総苞片に横隔壁があることが共通の特徴である。これらの種は互いによく似ており，しばしば誤同定されるので，検索表を示して区別点を明らかにした。

(東北大学大学院理学研究科附属植物園)